



South of Embley project

Expression of interest

Wharf Fender Assembly

Package Number: 25977-000-MRA-S000-00002

Package Title: Wharf Fender Assembly

General Description

Rio Tinto’s South of Embley (SoE) project is located approximately 40 km south-west of Weipa in far North Queensland, Australia. The site will require Wharf Fender Assemblies. The scope includes design, manufacture, testing and supply of complete fender assemblies.

Specific Scope Requirements

The scope of work will include but not be limited to the design, manufacture and supply of:

- Fender rubber unit; and where applicable;
- Fender frontal panel and rope guard;
- Protective coating of steelwork;
- Ultra high molecular weight polyethylene (UHMWPE) facing pads;
- Chains; and
- Cleats, bolts and shackles.

Details of the scope of work are summarised below:

Facility	Boyd dolphins	Boyd dolphins	Boyd tug berths	Boyd tug berths	Boyd and river navigation aids
Structure	Dolphin	Dolphin ladder	Tug berth	Pilot boat	Navigation aid
Fender shape	Cone cell fender	Square extruded fender bonded with UHMWPE	Twin-series cone cell fender (2 fenders per unit)	Square extruded fender bonded with UHMWPE	HDPE rectangular fender
Size (mm)	1,800 high	200 high x 200 wide	700 high (1,400 high total)	80 high x 80 wide	70 high x 140 wide
Length (mm)	-	8,000	-	5,000	5,500
Guaranteed Minimum Rated Energy	2,185 kNm	11.5 kNm/m	117 kNm (per fender unit)	1.6 kNm/m	-

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Facility	Boyd dolphins	Boyd dolphins	Boyd tug berths	Boyd tug berths	Boyd and river navigation aids
Structure	Dolphin	Dolphin ladder	Tug berth	Pilot boat	Navigation aid
Guaranteed Maximum Rated Reaction	2,039 kN	334 kN/m	280 kN (per fender unit)	76 kN/m	-
No. of performance verification tests	All	10% of no. units supplied (rounded up)	All	10% of no. units supplied (rounded up)	10% of no. units supplied (rounded up)
Fender panel and rope guard included (Y/N)	Y	N	N	N	N
Chain, cleats, shackles included (Y/N)	Y	N	Y	N	N
Bolts, washers, nuts included (Y/N)	Y	Y	Y	Y	Y
UHMWPE facing thickness (mm)	100	25, Bonded with fender	Not applicable	10, Bonded with fender	Not applicable

Facility	Roll-on/Roll Off (RORO) berth	Roll-on/Roll Off (RORO) berth	Roll-on/Roll Off (RORO) berth	Ferry berth
Structure	Roll-on/Roll Off (RORO) dolphin	Roll-on/Roll Off (RORO) pontoon abutment	Roll-on/Roll Off (RORO) pontoon	Ferry pontoon
Fender shape	Cone cell fender	Modular half-'V' unit fender	Arch fender	Arch fender
Size (mm)	700 high	750 high x 235 wide	500 high	250 high
Length (mm)	-	750	3,000	1,000
Guaranteed Minimum Rated Energy	148 kNm	63.2 kNm	60 kNm/m	15 kNm/m
Guaranteed Maximum Rated Reaction	352 kN	183 kN	286 kN/m	143 kN/m
No. of performance verification tests	All	10% of no. units supplied (rounded up)	10% of no. units supplied (rounded up)	10% of no. units supplied (rounded up)
Fender panel and rope guard included (Y/N)	Y	N	N	N
Chain, cleats, shackles included (Y/N)	Y	Y	N	N
Bolts, washers, nuts	Y	Y	Y	Y

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included (Y/N)				
UHMWPE facing thickness (mm)	100	Not applicable	30	30

All materials, workmanship and testing shall conform to the following requirements:

AS 1180	Australian Standard Methods of Test for Hose made from Elastomeric Materials – Method 2 Tensile Strength and Elongation
AS 1554	Structural steel welding
AS 1683.12	Method of Test for Elastomers – Method 12 Determination of Tear Strength
AS 1683.13	Method of Test for Elastomers – Method 13 : Compression Set of Vulcanised Rubber Under Constant Deflection
AS 1683.15.2	Method of Test for Elastomers – Method 15.2 : Durometer Hardness
AS 1683.24	Method of Test for Rubber – Determination of Resistance of vulcanised or thermoplastic rubber to Ozone Cracking - Static Strain Test
AS 2321	Short-link chains for lifting purposes
AS 4100	Steel Structures
DIN 86076	Machine Tools – Lathes of Normal Accuracy, Swing up to 800 mm, Acceptance Conditions
BS 903.A9	Physical Testing of Rubber - Determination of Abrasion Resistance
BS 903.A21	Physical Testing of Rubber - Determination of Rubber to Metal Bond Strength
BS 6349 Part 4	British Standard Code of Practice for Design of Fendering and Mooring Systems
PIANC /AIPCN Report WG33, 2002	Guidelines for the Design of Fender Systems: 2002

Delivery Schedule

Forecast Award Date: Q1, 2016

In 2015, Rio Tinto is undertaking a detailed feasibility study that will inform a final investment decision. A decision is expected to be received in the final quarter of 2015. Future procurement decisions are dependent on board approval.

Construction of associated mine infrastructure is anticipated to take 36 months once final board approval is granted.

Instructions to Suppliers

If your business possesses the capability and capacity to perform the stated scope of work, please submit a registration of interest via the ICN Gateway at www.southofemblemley.icn.org.au.

Please ensure that:

- Your company profile on ICN Gateway is complete, up-to-date and accurate
- You register your interest as a Full Scope or Partial Scope supplier (where applicable), and
- You respond to all project-specific questions via the ICN Gateway.

More Information

Please contact the Industry Capability Network Queensland on +61 (7) 3364 0676 should you have any enquiries regarding this scope of work.

More information about the South of Embley Project can be found on the Rio Tinto website www.riotinto.com.

Disclaimer

Scope of Work is indicative only and is intended to be used as a summary description of work which may be required by Rio Tinto and may be subject to change. Full scopes of work will be made available to parties that are invited to tender. There is no undertaking to contract or proceed to a competitive process implied by this form. Further contact with interested suppliers will be at Rio Tinto's discretion.